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THE ECONOMICS OF TAX COMPLIANCE: FACT AND FANTASY*

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ABSTRACT

This paper reviews the current state of theoretical and empirical knowledge regarding compliance with the federal income tax laws. We focus on the validity of certain myths that have come to dominate tax compliance discussions. Toward that end, we discuss three general categories -- empirical work, theoretical methodology and fiscal policy recommendations -- that seem to require more careful assessment and formulation.

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Robin: On Tuesday, I made a false income tax return.

All: Ha! Ha!

1st Ghost: That's nothing.

2nd Ghost: Nothing at all.

3rd Ghost: Everybody does that.

4th Ghost: It's expected of you.

W. S. Gilbert, Ruddigore, Act ii

I. INTRODUCTION

Announcements by both the Internal Revenue Service and private analysts that in recent years unreported taxable income in the United States has been averaging 10-15 percent of total taxable income[1] and that noncompliance seems to be growing rapidly[2] have produced a certain sense of panic among commentators in academia, the private bar, government and the news media. One commentator went so far as to say: "the dramatic deterioration in compliance levels witnessed thus far, if not reversed quickly and forcefully, will gain further momentum and eventually erode, beyond repair, the integrity of our present income tax system."[3]

A National Academy of Science Panel on Tax Compliance has been established; the American Bar Foundation has begun a massive research

effort; and the Internal Revenue Service has held a series of conferences of academic experts from a wide variety of disciplines in an effort better to understand the causes of noncompliance and to develop new tools to combat it.

Beginning in 1981 and again in 1982 and 1984 Congress provided the IRS with new weapons to be used in its battle against taxpayer noncompliance. They include increased and new penalties for substantial understatements of tax liabilities ({6661), for aiding and abetting understatements of tax liabilities ({6701), for the filing of frivolous returns ({6702), for failure to supply taxpayer identification numbers ({6676(a)), for failure to file information returns ({{6652, 6678, 6686), for extended failure to file tax returns ({6651) and for the promotion of abusive tax shelters ({6700). In addition, criminal fines were increased ({{7201, 7203, 7205, 7206, 7207) and additional information reporting was required ({{6049, 6041A, 6678, 6050E, 6053(c), 6706, 6708). New requirements for registering tax shelters with the IRS and for maintaining lists of tax shelter investors were enacted ({{6111, 6112, 6707, 6708) and the IRS was given authority to seek injunctions against the promoters of "abusive tax shelters" ({7408). Indeed, the compliance measures enacted in 1982 were estimated to raise one-third of the total revenues estimated to be raised by the 1982 Tax Equity and Fiscal Responsibility Act.

Although recent analyses of the tax compliance problem have involved experts from a variety of disciplines in addition to economics -- notably law, sociology and psychology -- economic analyses of the noncompliance problem have tended to dominate the research and policy agenda. Not only were the 1981 and 1982 legislative enactments consistent with the basic posture of the economics literature, but the 1982 committee reports seem also explicitly to embrace the economic model, describing the tax collection process as a "tax or audit lottery" where citizens are assumed to endeavor to optimize outcomes. Moreover, noncompliance estimates and concerns seem to have motivated (and certainly are used by) economists to justify a variety of fiscal policy recommendations. For example, one of the reasons now routinely advanced for moving to a lower-rate broad-based income tax or even for abandoning an income base in favor of a consumption-based tax is the alleged advantages of these regimes in terms of compliance. While we certainly have no intention of inhibiting the tax compliance cottage industry (of which we clearly are a part), this NTA-TIA Conference seems an appropriate occasion for pausing to reflect upon the validity of certain myths that have come to dominate tax compliance discussions. Toward that end, we have selected three general categories -- empirical work, theoretical methodology and fiscal policy recommendations -- that seem to require more careful assessment and formulation.

II. MYTH #1, EMPIRICAL DATA: WE KNOW HOW MUCH NONCOMPLIANCE THERE IS AND HAVE A CLEAR SENSE OF ITS CAUSES

Estimating the extent and nature of noncompliance with the tax laws is of course a difficult task, but it is one that tends to be done regardless of the shortcomings of the results. Policymakers, notably

the Congress, insist upon knowing the effect of tax law revisions on total federal revenues and thus estimates are put forth as if they were readily ascertainable facts. Likewise, and for obvious reasons, Commissioners of Internal Revenue routinely inform Congress and the public in nominally precise terms about the size, composition and growth rate of the tax compliance gap. Attempts by academic economists to estimate aggregate noncompliance using macroeconomic data date to the late fifties and early sixties. More recently empirical techniques have been applied to microeconomic data in an effort to delineate the causes of the problem as well as its size. Despite the relatively long history of these efforts, it is not unfair to say that empirical uncertainties still abound. James S. Henry, who has conducted the most comprehensive survey to date of research on federal income tax noncompliance, has cast serious doubt on the methodological soundness of all of the half-dozen or so empirical studies of aggregate noncompliance contained in the literature.[4]

Estimating noncompliance in both the legal and illegal sectors of the economy is fraught with difficulties. Illegal sector estimates are obviously suspect. Recent estimates with respect to the legal sector (and empirical studies of them) almost invariably involve extrapolations from the IRS Taxpayer Compliance Measurement Program ("TCMP"). This Program involves intensive line-by-line audits of a randomly selected group of taxpayers and the tax understatements that it detects are then extrapolated to the broader universe of taxpayers generally. This is not an occasion for evaluating that program in detail, but it deserves emphasis that measuring aggregate noncompliance is but a secondary use of TCMP. That program is principally designed to establish and refine IRS audit selection mechanisms, a task for which it is well-suited. This is because TCMP provides direct evidence of how much tax understatement can be detected by careful audits; it is an excellent mechanism for assessing audit effectiveness, for guiding the allocation of scarce IRS audit resources and for predicting how many dollars of additional tax revenues might be produced from additional dollars spent on tax audits. Coincidentally, it produces the best available data for estimating noncompliance, certainly better than is likely to emerge from surveys. But extrapolations from TCMP data to estimate aggregate noncompliance are necessarily subject to the inherent limitations of TCMP. To the extent that taxpayers selected for TCMP audits are able to conceal, for example, unreported cash income from the TCMP auditor, extrapolated estimates of noncompliance will be understated. That TCMP has generally missed nonfilers altogether further restricts its validity as a mechanism for estimating noncompliance.

Likewise, to the extent that empirical studies of the causes of noncompliance are grounded in TCMP data and other results of IRS audits and penalty assessments, they are subject to the same inherent limitations. A particular problem which arises in this regard is the treatment of variables related to IRS activity such as audit rates, penalty rates and the level of sanctions. Charles Clotfelter, who examined 1969 TCMP data,[5] acknowledges that these must influence

taxpayer reporting behavior, but leaves them out of his analysis because of what is termed "the simultaneity bias." The problem is the following: levels of noncompliance depend on a number of factors, including, for example, the likelihood of audit. At the same time, the likelihood of audit depends on the level of noncompliance. Thus it is inappropriate to use the likelihood of audit as an exogenous variable in an equation meant to explain the causes of noncompliance. As an empirical matter this problem can be overcome by including an equation which explains the probability of audit as a function of levels of noncompliance and other factors such as IRS resources. This, however, has not yet been done.[6]

That tax noncompliance is a serious problem can be conceded to have been established -- if one puts any faith in the existing studies, 10 to 15 percent of total taxable income seems a conservative estimate -- but this by itself is of limited usefulness. We in fact know far less about the components and the rate of growth of the compliance gap than the current estimates would have us believe.

III. MYTH #2, THEORETICAL METHODOLOGY: TAX NONCOMPLIANCE IS AN EXCELLENT OCCASION FOR RATHER STRAIGHTFORWARD APPLICATION OF THE ECONOMICS OF CRIME MODEL.

The basic economics of crime methodology was established more than fifteen years ago by Gary S. Becker[7] and has frequently been applied to tax evasion and avoidance.[8] Generally, this approach treats criminal activity as a rational individual decision based upon probabilities of detection and conviction and levels of punishment. The bulk of the theoretical economic literature on tax compliance consists of extensions and refinements of Becker's general model. Although these extensions seem natural -- tax evasion, after all, is an economic crime -- most of the theoretical work to date is not particularly useful either for policy analysis or empirical study. Generally speaking, the problem is that the models are too simple. They consider only the actions of taxpayers and ignore the variety of other agents involved in the revenue collection process -- in particular, they fail to take into account the interrelationships between flexible IRS policy instruments and noncompliance behavior.[9] Moreover, they ignore important institutional, legal and political constraints that inhibit the ability of policymakers to apply what otherwise appear to be theoretically desirable remedies.

At the broadest level, the failure is one which occurs generally in the literature applying economic analysis to law: the failure to analyze legal issues within a context that takes as <u>given</u> "answers to non-economic questions about political legitimacy and authority, about the rights of individuals and the power of the state, about the political, moral and legal constraints on the exercise of rights and powers."[10] In the context of tax compliance research this general problem becomes manifest in at least three important ways.

First, there is extraordinary confusion about the relevant definition of noncompliance. The Internal Revenue Service (and it seems the Congress, the National Academy of Sciences Panel and the

American Bar Foundation Project) regards the appropriate measure of noncompliance to be "all the federal income taxes that are owed but not paid."[11] This then is what the Commissioner of Internal Revenue has in mind when he reports an "income tax gap" of more than $100 billion.[12] But this estimate must be disaggregated at least into three major components: (1) tax evasion with respect to sources of income from illegal activities, such as drugs and gambling; (2) tax evasion from otherwise legal activities, such as unreported cash income of self-employed persons; and (3) tax understatements from taking advantage of factual and legal uncertainties about the application of the substantive tax law, for example, as in the tax shelter context.

Legal, moral and political constraints operate quite differently for each of these three categories. For example, as with criminal law generally, application of criminal sanctions for tax understatements requires proof of moral culpability, satisfaction through due processes of law that the "criminal" deserves punishment. Thus, the law provides that criminal tax evasion requires proof of a particular state of mind of the noncomplying taxpayer, namely, of a <u>willful</u> understatement of tax liability. Proving that a tax understatement was characterized by the requisite knowledge and deliberate behavior is an extremely difficult matter and, in practice, renders the criminal sanction ineffective for all but a very few cases.[13] Thus, tax evasion becomes something of a special case. The tax law -- in sharp contrast to the criminal law generally -- is characterized by ambiguity and uncertainty. In the extreme case, the so-called abusive tax shelters, for example, transactions that have little or no chance of being upheld by a court are routinely structured so that there is virtually zero probability that criminal sanctions will apply to the tax shelter investors whose taxes have been understated.

In fact, attorneys and accountants routinely have provided "fraud insurance" in the form of tax opinions that assert there to be a "reasonable basis" that the taxpayer's position would be upheld. Application of even a relatively small "negligence" penalty thus becomes extremely unlikely; all that the aggressive taxpayer in such cases typically risks is the possibility that the tax avoided will have to be repaid, plus interest, or beginning in 1981 and 1982, perhaps, special penalties for overvaluation or substantial understatement of tax. Application of the standard economic theory of crime to tax avoidance cases of this type, where fraud penalties are easily avoided, produces an unambiguous prediction of behavior: throughout the 1970s <u>no one</u> should have paid the taxes they owed in these situations.

The most rudimentary cost-benefit analysis of a decision whether or not to underreport taxable income reveals the following characteristic: if the sanction structure is to have any deterrent effect, a probability of punishment of less than 100 percent requires that the sanction must be greater than the amount of the cheater's benefit. During the past decade, while budget and political constraints meant that aggregate audit probabilities were typically closer to 2 percent than 100 percent, interest rates on understated tax

liabilities were often less than market rates. Even if one disaggregates audit probabilities by class of taxpayer, the sanction and detection structure still appears to be so lenient toward underreporting that the high compliance rate can only be explained either by taxpayers' (and third-party reporters) commitment to the responsibilities of citizenship and respect for the law or lack of opportunity for tax evasion. The 1981 and 1982 legislation has begun to reverse this imbalance, but the income tax can still be viewed as a game that for many classes of taxpayers favors significantly those who underreport. That an economic model analyzing the expected utility calculation of a would-be tax evader recommends large increases in the applicable sanction in light of the very low probability of its application quickly becomes irrelevant as a policy matter. In this country, at least, legal, moral and political constraints make this necessarily so. Coherence in our criminal law generally demands that "punishment fit the crime"; regardless of any alledged potential theoretical advantages, life imprisonment is simply not within the feasible set of punishments for tax evasion. Moreover, <u>no</u> criminal sanction (nor even a substantial civil "fraud" penalty) can be imposed absent satisfactory proof that the tax understatement was willful.

The compliance problem will not be solved without taking into account these kinds of structural limitations on both detection and punishment. Neither the level of punishment nor of audits can realistically be greatly expanded. Moral, legal and political constraints therefore seem to require more narrowly targeted responses to noncompliance. The new requirements for information reports, increased penalties for failure to file such reports and penalties for valuation overstatements enacted in 1981 and 1982 provide illustrations of such responses. Any economic analysis of the various components of noncompliance must endeavor to take into account not only such institutional constraints on the level of punishment or audits, but also differences in opportunities to understate taxes.[14]

Second, the tax context produces a rather unique behavioral framework which arguably requires different theoretical approaches. Unlike other crimes -- even economic crimes -- tax compliance requires a report -- a tax return -- through which the taxpayer directly conveys a significant amount of information to the cognizant law enforcement agency. The IRS has broad authority to demand information on the tax return, to require that such information be supplied under penalties of perjury and to adjust its detection and audit programs in light of the reports it receives. Yet, as we mentioned above, the existing theoretical literature largely ignores this central feature of the system, and takes the IRS to be an exogenous element of the revenue collection process, despite the fact that the evidence in favor of a rational, optimizing IRS seems even more compelling than the evidence which supports that view with respect to taxpayers. After all, the primary purpose of TCMP audits is to evaluate how taxpayer's reports differ from -- and at the same time provide important clues to -- their proper income tax liability and then to suggest how IRS audit resources might be directed toward their most effective uses. Thus the revenue

collection process is best thought of as a "game" with observed levels of noncompliance, auditing and penalty assessment determined by the interaction between taxpayers and the IRS. This approach has important implications for both theory and empirical work, a point we shall return to in Section 4.[15]

Finally, the tax compliance problem is different from other "crimes" because of the important and confounding roles played by a variety of third parties. These include attorneys and accountants who advise citizens on tax matters and often insulate them from criminal penalties; bankers, brokers and others who accumulate considerable information about their customers' financial affairs, appraisers who are often paid by taxpayers to estimate values that have important tax consequences, and tax shelter promoters and tax protesters who inspire citizens to be aggressive in reducing taxes and often to engage in fraudulent tax reduction activities. The intervention of these third parties in the tax compliance context may well require additional innovations in theory to capture the tax compliance problem.

Despite these remarks about the weaknesses of the existing theoretical economics literature on tax compliance, we do not mean to suggest that economics has nothing to tell us about taxpayer behavior; indeed, we believe the compliance problem is largely an economic one. Some of the people with substantial opportunities to evade are likely to be exactly the sophisticated, rational actors economic models postulate. People without substantial opportunities to evade are not part of the problem; whether they are responding rationally to a high likelihood of detection or are simply "honest" may even be beside the point.[16]

IV. MYTH #3, FISCAL POLICY RECOMMENDATIONS: THE TAX COMPLIANCE PROBLEM WOULD DISAPPEAR IF, FOR EXAMPLE, TAX RATES WERE LOWERED OR THE INCOME TAX WERE REPLACED BY A CONSUMPTION TAX

Consider the following recent quotes:

> One widely accepted explanation for the size and growth of unreported income is high marginal income tax rates.[17]
>
> The principal reason [for the growing compliance gap] is that inflation is pushing people into higher and higher tax brackets and increasing the pressure to cheat.[18]
>
> Reducing the benefits [of tax evasion] means finding ways to reduce the marginal tax rate.[19]

Claims such as these, made by acknowledged tax experts, are commonplace; the myth that high marginal tax rates cause noncompliance is the most pervasive of all.[20] In fact, that lowering tax rates will induce greater compliance is a claim supported neither by the theory of tax compliance nor by the empirical evidence. This notion stems, at least in part, from the basic cost-benefit calculation that underreporting produces lesser benefits at lower rates of tax. Where fraud penalties are not applicable, however, lower tax rates will also reduce the costs of underreporting, and thus the appropriate cost-benefit calculation tends to yield ambiguous predictions.[21] Moreover, when the basic economic model is revised to include the actions of government auditing and collection agents as a factor in the tax

compliance calculus, lowering rates suggests greater, rather than lesser, noncompliance.[22] Unfortunately direct empirical evidence regarding the relationship between marginal tax rates and tax evasion is very limited. The most direct study of this issue is due to Charles Clotfelter, who examined data from the 1969 TCMP audits. While he found a positive relationship existed, this result must be used with caution since there are several problems with his study.[23]

Despite the paucity of formal empirical analysis of this issue, the large share of underreporting attributable to capital gain income provides a counterexample to the notion that lower rates alone will cure noncompliance. Only 40 percent of capital gain income is currently taxed, and a top rate of 20 percent applies to capital gains (in contrast to the maximum 50 percent rate that applies to ordinary income). Nevertheless, transactions involving capital gains currently account for a significant proportion of unreported income from legal sources -- about 11 percent according to an IRS estimate. This suggests that where there is opportunity for underreporting of income people will understate such income even if the unreported income would be taxed at a low rate.[24] Thus, there is, at this time, little reason to believe that lower rates alone are likely to inhibit noncompliance.[25]

Compliance, however, might improve through broadening the tax base because by repealing tax preference provisions legal uncertainties might be lessened; people who itemize deductions might be shifted to the standard deduction, which affords much less opportunity for tax understatements; and the elimination or reduction of tax shelter investment opportunities might free up IRS compliance personnel for other activities.

Likewise, the emerging mythology that noncompliance would be solved by replacing the income tax with a personal tax on consumption is not supported by examination of the sources of noncompliance. With respect to illegal sources of income, personal expenditure taxes are not likely to prove any easier to collect than personal income taxes. With regard to legal income sources, most underreporting has historically involved sources of income, such as tips, subject neither to withholding nor to effective information reporting. It seems therefore that the underreporting of receipts from labor and capital would be as great a problem under a personal consumption tax as it is under the income tax. Enforcement will tend to depend upon the efficacy of withholding, third-party reporting and information-gathering mechanisms, and the ability of the IRS to match third-party information with individual returns. A closer look at two important sources of unreported income, tips and capital gains, should make this clear. Consider the following March 1984 National Public Radio report on an anonymous New York waitress:

> "You know, I have nothing against the government, they need the money too."
> That is a waitress, she works here in New York City, at a not very nice restaurant. She told me that she does not report any of her tips at tax time. The Treasury Department meanwhile, in Washington, has estimated that up to 84 percent of tip income has gone unreported. . . .
> I asked my waitress what was her salary. How much did she make?
> "I get a buck fifty-five an hour."
> Reporter: A buck fifty-five an hour, on the understanding that's not really what you are getting?
> Waitress: "Oh no, you think I'd work for $1.55 an hour?"
> Reporter: You don't look like the kind of person who'd work for $1.55 an hour. (ha, ha.) What do you do with the cash when they give it to you? . . .
> My waitress [said] that she puts her unreported income in the bank every Monday:
> "Oh yeah, I put it in the bank, what else am I going to do with it?"
> Reporter: Well do you have any fear that little you, a waitress somewhere in the city of New York, would be noticed by the Internal Revenue Service and caught?
> Waitress: "I bank the money, I don't spend it very much."
> Reporter: But there it is. It's on file. Your deposit slips are there; they know that you've earned it, which they wouldn't know if you didn't put it in the bank.
> Waitress: "That's true, I don't know."
> My waitress is not unusual. Congress found that restaurant workers believe the possibility of an audit is so remote that they have become fearless.

Consider a waitress who, under the income tax, deprives the federal fisc of the revenue from the unreported tips at her marginal tax rate. Under a consumption tax, she might not only conceal the receipts but also claim a savings deduction for her deposits in her bank account. The consumption tax would thus provide a double benefit for underreporting by enabling individuals to consume a credible portion of their unreported receipts while deducting their savings from their reported receipts. This additional reward for noncompliance seems likely to increase incentives for nonreporting not only of tips but also of other common forms of unreported receipts (such as income from self-employment, moonlighting, dividends, interest, small businesses, and so forth). To the extent that a consumption tax requires borrowed amounts to be included in receipts, similar problems seem likely to emerge. One possible response of consumption tax proponents is that the deduction for savings will tend to stimulate reportable investments (opening savings accounts, for example, instead of hiding receipts in mattresses) and thereby facilitate IRS detection of underreporting. It nonetheless seems unlikely that our waitress, who has not been deterred under the income tax from depositing her unreported income in a savings account, would feel constrained from deducting these deposits on her consumption tax return.

By the same token, a consumption tax would markedly increase the incentives for not reporting proceeds from the sale of capital assets, because all such proceeds could be included in receipts without either the exclusion for the taxpayer's "basis" or the 60 percent exclusion for the amount by which receipts exceed basis. The underreporting of receipts from the sale of property would therefore produce a greater loss of tax revenue under a consumption tax than under the present income tax, even ignoring the ability of taxpayers under a consumption tax to deduct as savings any reinvestment of their unreported receipts. This form of noncompliance would make the government a two-time loser under a consumption tax: the government not only would initially subsidize the purchase of the property by allowing its immediate deduction but would, upon sale of the property, fail either to recapture its initial investment or to collect tax on the investors' gain.

Finally, it is worth commenting briefly on the consumption tax problems of withholding. We do not regard it as accidental that the highest estimated rates of compliance under the income tax, currently

about 99 percent, involve wages from which taxes can effectively be withheld. In effect, income tax withholding makes involuntary the income tax reporting and collection process. Accurate withholding would almost certainly prove more difficult under an expenditure tax than under the current income tax. Withholding is currently estimated based on the taxpayer's wages adjusted for the average credits and deductions for that wage level. By contrast, under an expenditure tax, liability would turn not only on the taxpayer's wages but also on his or her expected allocation of income between consumption and savings. While wage withholding could probably be made as accurate in the aggregate under an expenditure tax as under the income tax, greater variations and withholding errors among individuals seem inevitable because of variations in savings for different individuals and for the same individual in different years. The greatest variations seem likely to be concentrated in the upper brackets, where Henry's data suggest that problems of income tax noncompliance are greatest. Moreover, as one of us has detailed elsewhere, increased information reporting, such as reporting of loans, would most likely be necessary under an expenditure tax.[26]

V. CONCLUSION

In summary, it is certainly true that compliance is a serious problem under the current income tax. This problem demands attention, both at the level of theory and of fact, in order to achieve a better understanding of the problem and perhaps of the economics of crime and mechanisms of deterrence generally. Hopefully, theoretical refinements and empirical study will enable us to design better compliance mechanisms and to improve those that already exist. The myopic notion that compliance problems would disappear, however, if we would lower tax rates or shift from an income to a consumption tax does not withstand even this introductory analysis. Improving tax compliance will almost certainly require further legislative or administrative actions specifically directed toward that end.

FOOTNOTES

1. Internal Revenue Service, Office of the Assistant Commissioner of Planning and Research Division, Income Tax Compliance Research Estimates for 1973-81, July 1983 and James S. Henry, "Noncompliance With U.S. Tax Law: Evidence on Size, Growth, and Composition," in P. Sawichi (ed.) Income Tax Compliance: A Report of the ABA Section on Taxation Invitational Conference on Income Tax Compliance (Chicago: American Bar Association, 1983), p. 17. (Hereafter referred to as Sawichi, 1983.)

2. Compliance Gap: Hearings Before the Subcommittee on Oversight of the Committee on Finance, 97th Congress, 2d Session, 1982.

3. Thomas G. Vitez, "Information Reporting and Withholding as Stimulants of Voluntary Compliance," in Sawichi (1983):191.

4. Henry (1983).

5. Charles Clotfelter, "Tax Evasion and Tax Rates: An Analysis of Individual Returns," Rev. of Econ. and Stat. 65 (1983):363-373.

6. Another example of the use of TCMP data to analyze individual tax compliance behavior is provided by Ann Witte and Diane Woodbury, "The Effect of Tax Laws and Tax Administration on Tax Compliance:

The Case of the U.S. Individual Income Tax," National Tax Journal (March 1985). These authors include audit rates and sanction levels as explanatory variables in their model but also fail to deal with the simultaneity problem. They, in fact, find that for some taxpayer classes the probability of a civil fraud penalty is negatively related to voluntary compliance. This may be explained by simultaneity bias, but may also be explained by the failure of audit rates to accurately proxy the likelihood of detection (see footnote 14).

7. Gary S. Becker, "Crime and Punishment: An Economic Approach," Journal of Political Economy 76 (March-April 1968):169-217.

8. See, for example, Michael G. Allingham and Agnar Sandmo, "Income Tax Evasion: A Theoretical Analysis," Journal of Public Economics, 1 (November 1972):323-38. A useful summary of the literature can be found in Ann Witte and Diane Woodbury, "What we Know About Factors Affecting Compliance with the Tax Laws," in Sawichi (1983).

9. As a technical matter this is reflected in the treatment of IRS policy instruments as exogenous parameters.

10. Alvin K. Klevorick, "Legal Theory and the Economic Analysis of Torts and Crimes" forthcoming in Columbia Law Review.

11. Internal Revenue Service (1983).

12. Tax Compliance Act of 1982 and Related Legislation, Hearings before the House Committee on Ways and Means, 97 Cong. 2 sess. (GPO, 1982).

13. See, e.g., United States v. Dahlstrom, 713 F.2d 1423 (9th Cir. 1983) (reversing convictions of tax shelter promoters on grounds that willfulness was not present because at the time the shelter was sold, no statute or court decision directly disallowed the tax benefits promised by the transaction the defendents were promoting).

14. It is often an implicit assumption in discussions of tax evasion or avoidance that observed audit frequencies are a natural proxy for the probability of detection. However, the recent increase in the ability of the IRS to match third party reports to taxpayer returns and to process written notices requiring more tax without an audit significantly weakens this link. For example, taxpayer classes for which the majority of income is in the form of wages have very low audit frequencies. But the likelihood that a substantial understatement of income will be detected is

nevertheless very high for members of this class. The lack of opportunity for tax evasion here translates as a high probability of detection and thus explains the high compliance levels for these classes of taxpayers straightforwardly in terms of the standard economic model. The real compliance problem, however, rests with those classes of taxpayers who do have an opportunity for tax evasion and it is in understanding their behavior that more sophisticated models are needed.

15. For models which begin to incorporate the strategic elements of the tax compliance game see Michael J. Graetz, Jennifer F. Reinganum and Louis L. Wilde, "An Equilibrium Model of Tax Compliance With A Bayesian Auditor and Some ´Honest´ Taxpayers," Caltech Social Science Working Paper no. 506, December 1983 and Michael J. Graetz, Jennifer F. Reinganum and Louis L. Wilde, "A Simple Model of Tax Compliance Under Budget-Constrained Audits," Caltech Social Science Working Paper no. 520, November 1984.

16. One common criticism of economic models of tax evasion is that taxpayers are in fact ignorant of the relevant probabilities of detection facing them. This conclusion is based largely on survey data which often fails to distinguish taxpayers by class, particularly with respect to opportunities to evade. If one asks an average taxpayer, for whom these opportunities are limited, to estimate the likelihood of audit, the answer will be meaningless

since audits are not particularly relevant to such a taxpayer. If, instead, one asks the same taxpayer for an estimate that a given understatement of income will be detected by the IRS, the taxpayer´s detection probability estimate ("DPE") is likely to be high and reasonably accurate. Pooling these taxpayers with those who do have opportunities to evade will clearly bias average estimates of audit probabilities upward, but it is the probability of detection which is important. See footnote 14 for a related discussion. See also Graetz, Reinganum and Wilde (1983) for a model which incorporates the presence of some "honest" taxpayers.

17. Clotfelter (1983), p. 363.

18. Thomas Vitez, quoted in <u>Wall Street Journal</u>, April 10, 1984.

19. Alfred Blunstein, "Models for Structuring Taxpayer Compliance," in Sawichi (1983):170.

20. The most recent example of which we are aware can be found in Henry Aaron and Harvey Galper, <u>Assessing Tax Reform</u> (Brookings Institute, Washington, D.C., 1985). These authors list only two items as factors affecting compliance, marginal tax rates and complexity, stating that "the increase in the typical marginal tax rate has made tax avoidance increasingly profitable," (page 42).

21. For a summary of the literature and relevant results see Witte and Woodbury (1983). It is worth noting, however, that when the penalty is based on the amount of taxes evaded, then even the standard "economics of crime" model predicts that higher tax rates yield increased compliance; see Shlono Yitzhaki, "A Note on Income Tax Evasion: A Theoretical Analysis," J. Pub. Econ. 3 (1974):201-202. A more recent survey is provided by Frank Cowell, "The Economics of Tax Evasion: A Survey," London School of Economics, February 1985.

22. See Graetz, Reinganum and Wilde (1983). The point is that when marginal tax rates increase, the incentive to audit also increases. Thus, even if the partial equilibrium effect is to increase noncompliance, the general equilibrium effect, which incorporates the IRS response, is a decrease in noncompliance.

23. Clotfelter (1983). Clotfelter's study is based on TCMP audit data, and thus suffers from the limitations of that source discussed in Section II of this paper. In particular, his measure of the extent of noncompliance is the difference between the level of true income as determined by the TCMP audit and actual reported income. But the TCMP program is known to miss substantial amounts of unreported income. Moreover, initial TCMP assessments can be appealed, and when they are evidence suggests they tend to be reduced (Henry, 1983). In other words, there is a process by

which the TCMP auditors decide how much to assess, and that process must take account of the likelihood of appeal and the outcome of the appeal if one is made. If the result of this process is higher initial assessments for taxpayers with higher marginal tax rates, then it will appear in the data that higher marginal tax rates imply greater noncompliance. Besides calling Clotfelter's results into doubt, this provides yet another example of the need for theory to take into account the unique structural and behavioral features of the tax compliance problem.

24. The stringent reporting requirements of the 1982 legislation do not seem likely to solve the capital gain underreporting problem because noncompliance here tends not to involve securities or commodities but instead real estate, section 1231 exchanges, and collectibles such as coins, antiques, precious metals and works of art.

25. The issue of the relationship between marginal tax rates and taxpayer compliance is truly complex. For example, even if one found a positive correlation in a properly specified model, the direction of causation is not obvious. In India, where marginal tax rates are as high as 90 percent, tax evasion is massive. Indian commentators, however, suggest that there is a "climate for evasion" in that country (i.e., lax enforcement) which allows nominally high marginal tax rates. The latter are felt to be desirable politically, so the direction of causation may run from

noncompliance to high marginal tax rates.

26. Michael J. Graetz, "Implementing a Progressive Consumption Tax," <u>Harvard Law Review</u> 92 (June 1979):1598-1609